

p: tac

AAATGAGCTG	TTGACAATTA	ATCATCGGCT	CGTATAATGT	GTGGAATTGT	GAGCGGATAA
	EcoRI	SacI	KpnI	SmaI	
CAATTTTACA	CAGGAAACAG	AATTCGAGCT	CGGTACCCGG	GCTACATGGA	GATTAACTCA
			RBS		-> α-globin
ATCTAGAGGG	TATTAATAAT	GTATCGCTTA	AATAAGGAGG	AATAACATAT	GGTGCTGTCT
CCTGCCGACA	AGACCAACGT	CAAGGCCGCC	TGGGGTAAGG	TCGGCGCGCA	CGCTGGCGAG
TATGGTGCGG	AGGCCCTGGA	GAGGATGTTC	CTGTCCTTCC	CCACCACCAA	GACCTACTTC
CCGCACTTCG	ATCTGAGCCA	CGGCTCTGCC	CAGGTTAAGG	GCCACGGCAA	GAAGGTGGCC
GACGCGCTGA	CCAACGCCGT	GGCGCACGTG	GACGACATGC	CCAACGCGCT	GTCCGCCCTG
AGCGACCTGC	ACGCGCACAA	GCTTCGGGTG	GACCCGGTCA	ACTTCAAGCT	CCTAAGCCAC
TGCCTGCTGG	TGACCCTGGC	CGCCACCTC	CCCGCCGAGT	TCACCCCTGC	GGTGACGCGC
					->
TCCCTGGACA	AGTTCCTGGC	TTCTGTGAGC	ACCGTGCTGA	CCTCCAAATA	CCGTTAAACT
			RBS		-> β-globin
AGAGGGTATT	AATAATGTAT	CGCTTAAATA	AGGAGGAATA	ACATATGGTG	CACCTGACTC
CTGAGGAGAA	GTCTGCCGTT	ACTGCCCTGT	GGGGCAAGGT	GAACGTGGAT	GAAGTTGGTG
GTGAGGCCCT	GGGCAGGCTG	CTGGTGGTCT	ACCCTTGGAC	CCAGAGGTTC	TTTGAGTCCT
TTGGGGATCT	GTCCACTCCT	GATGCTGTTA	TGGGCAACCC	TAAGGTGAAG	GCTCATGGCA
AGAAAGTGCT	CGGTGCCTTT	AGTGATGGCC	TGGCTCACCT	GGACAACCTC	AAGGGCACCT
TTGCCACACT	GAGTGAGCTG	CACTGTGACA	AGCTGCACGT	GGATCCTGAG	AACTTCAGGC
	β108Asn->Gln				
TCCTGGGACA	AGTACTGGTC	TGTGTGCTGG	CCCATCACTT	TGGCAAAGAA	TTCACCCAC
CAGTGCAGGC	TGCCTATCAG	AAAGTGGTGG	CTGGTGTGGC	TAATGCCCTG	GCCCACAAGT
	-> SphI	rrB (5S, T1, T2)			
ATCACTAAGC	ATGCATCTGT	TTTGGCGGAT	GAGAGAAGAT	TTTCAGCCTG	ATACAGATTA
	NsiI				

.....

FIG. 1A

p: tac

AAATGAGCTG	TTGACAATTA	ATCATCGGCT	CGTATAATGT	GTGGAATTGT	GAGCGGATAA
		EcoRI SacI KpnISmaI			
CAATTTTACA	CAGGAAACAG	AATTCGAGCT	CGGTACCCGG	GCTACATGGA	GATTAAGTCA
			RBS	-> α-globin	
ATCTAGAGGG	TATTAATAAT	GTATCGCTTA	AATAAGGAGG	AATAACATAT	GGTGCTGTCT
CCTGCCGACA	AGACCAACGT	CAAGGCCGCC	TGGGGTAAGG	TCGGCGCGCA	CGCTGGCGAG
TATGGTGCGG	AGGCCCTGGA	GAGGATGTTT	CTGTCCCTTCC	CCACCACCAA	GACCTACTTC
CCGCACTTCG	ATCTGAGCCA	CGGCTCTGCC	CAGGTAAAGG	GCCACGGCAA	GAAGGTGGCC
GACGCGCTGA	CCAACGCCGT	GGCGCACGTG	GACGACATGC	CCAACGCGCT	GTCCGCCCTG
AGCGACCTGC	ACGCGCACAA	GCTTCGGGTG	GACCCGGTCA	ACTTCAAGCT	CCTAAGCCAC
TGCCTGCTGG	TGACCCTGGC	CGCCACCTC	CCCGCCGAGT	TCACCCCTGC	GGTGACGCCC
				->	
TCCCTGGACA	AGTTCCTGGC	TTCTGTGAGC	ACCGTGCTGA	CCTCCAAATA	CCGTAAAGT
			RBS	-> β-globin	
AGAGGGTATT	AATAATGTAT	CGCTTAAATA	AGGAGGAATA	ACATATGGTG	CACCTGACTC
CTGAGGAGAA	GTCTGCCGTT	ACTGCCCTGT	GGGGCAAGGT	GAACGTGGAT	GAAGTTGGTG
GTGAGGCCCT	GGGCAGGCTG	CTGGTGGTCT	ACCCTTGGAC	CCAGAGGTTC	TTTGAGTCCT
TTGGGGATCT	GTCCACTCCT	GATGCTGTTA	TGGGCAACCC	TAAGGTGAAG	GCTCATGGCA
AGAAAGTGCT	CGGTGCCTTT	AGTGATGGCC	TGGCTCACCT	GGACAACCTC	AAGGGCACCT
TTGCCACACT	GAGTGAGCTG	CACTGTGACA	AGCTGCACGT	GGATCCTGAG	AACTTCAGGT
β105Leu->Trp					
GGCTAGGCAA	CGTGCTGGTC	TGTGTGCTGG	CCCATCACTT	TGGCAAAGAA	TTCACCCAC
CAGTGCAGGC	TGCCTATCAG	AAAGTGGTGG	CTGGTGTGGC	TAATGCCCTG	GCCCACAAGT
-> SphI	rrB (5S, T1, T2)				
ATCACTAAGC	ATGCATCTGT	TTTGGCGGAT	GAGAGAAGAT	TTTCAGCCTG	ATACAGATTA
	NsiI				

.....

FIG. 1B

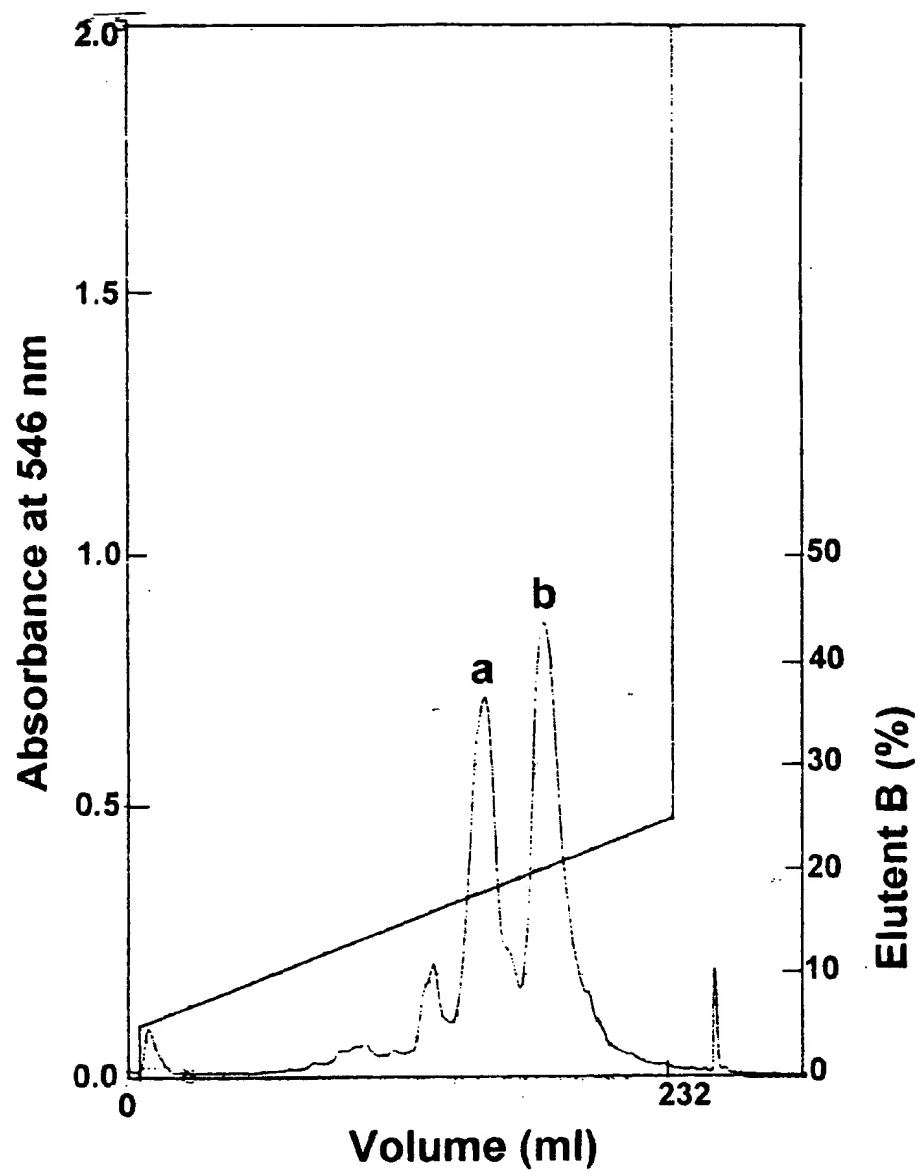


FIG. 2A

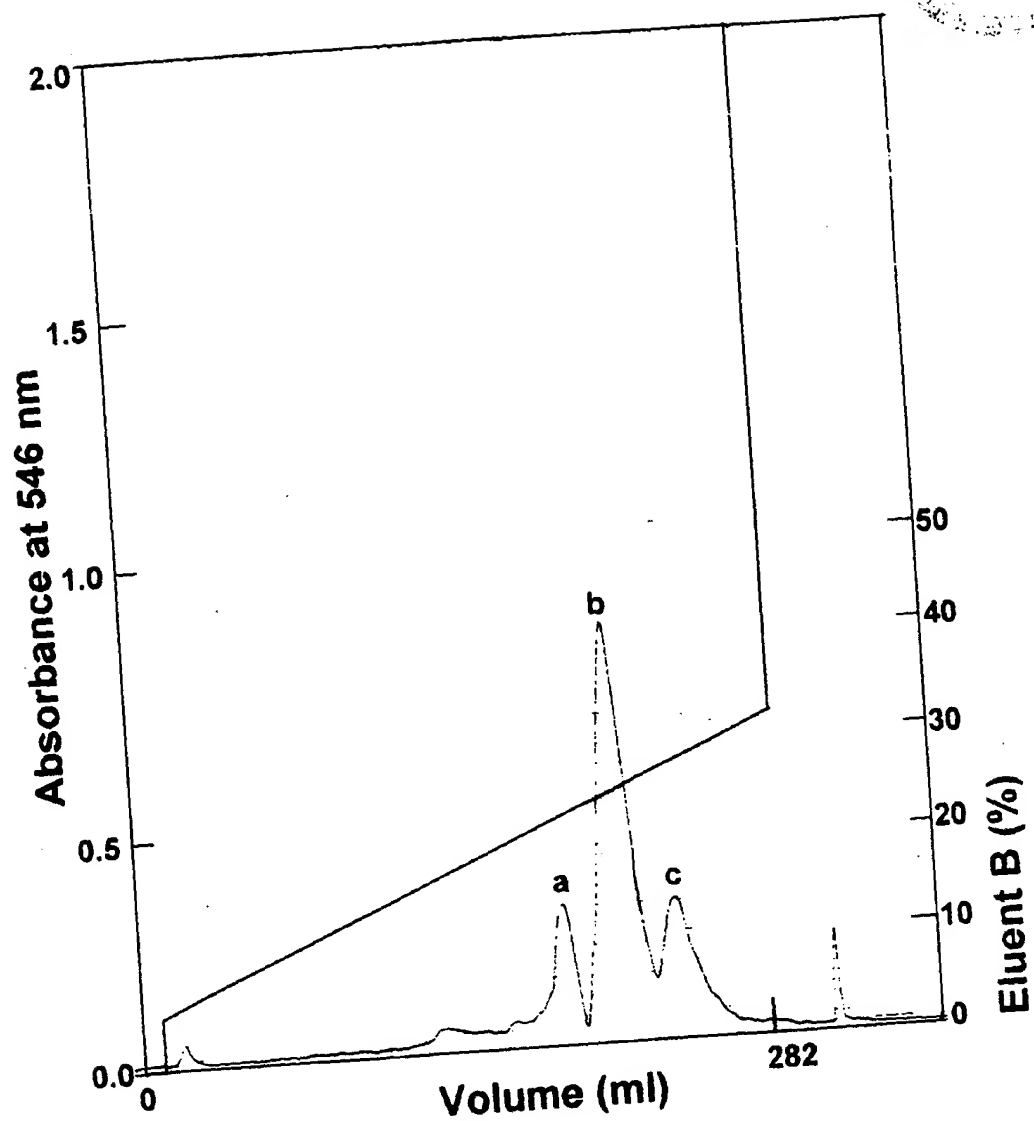


FIG. 2B

FIG. 3A

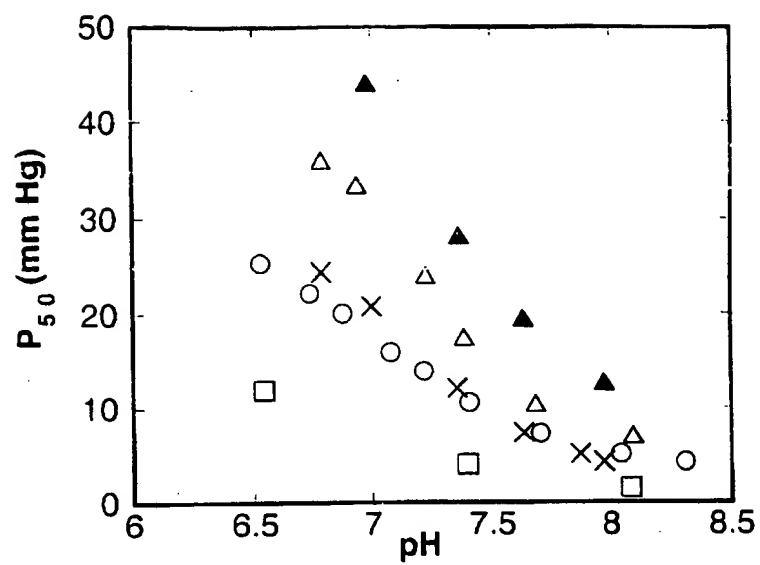
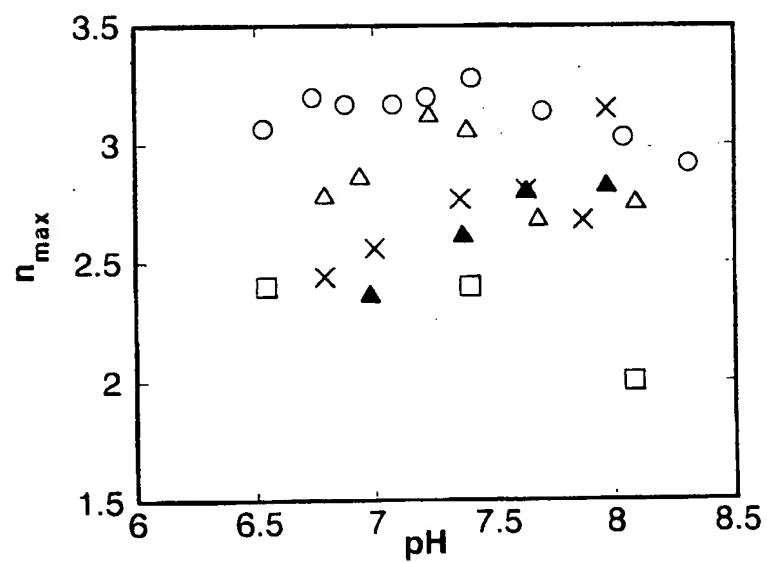


FIG. 3B



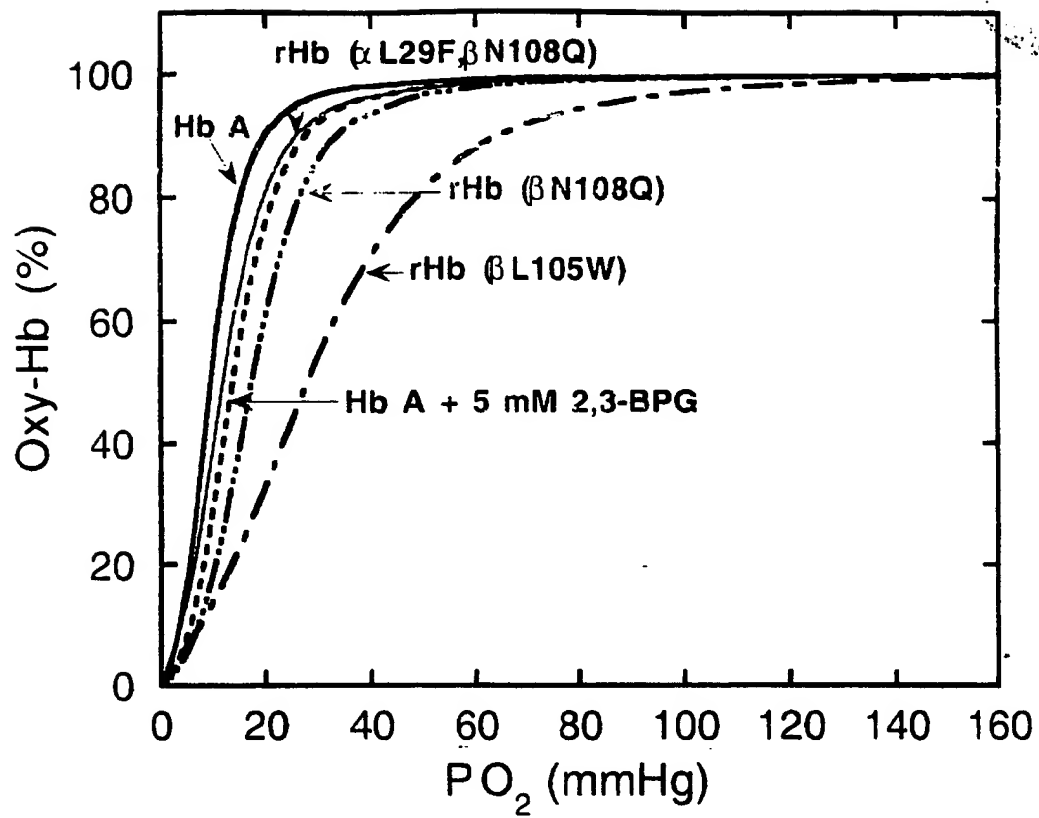


FIG. 4

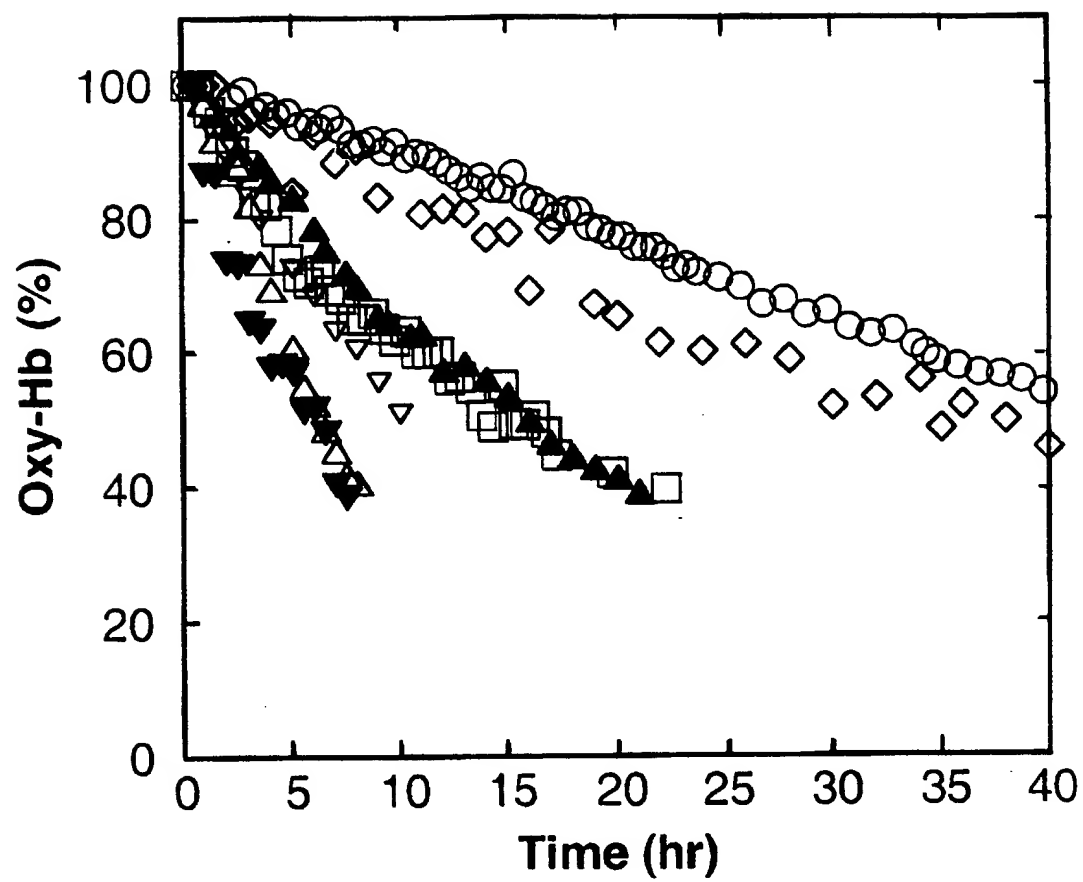


FIG. 5

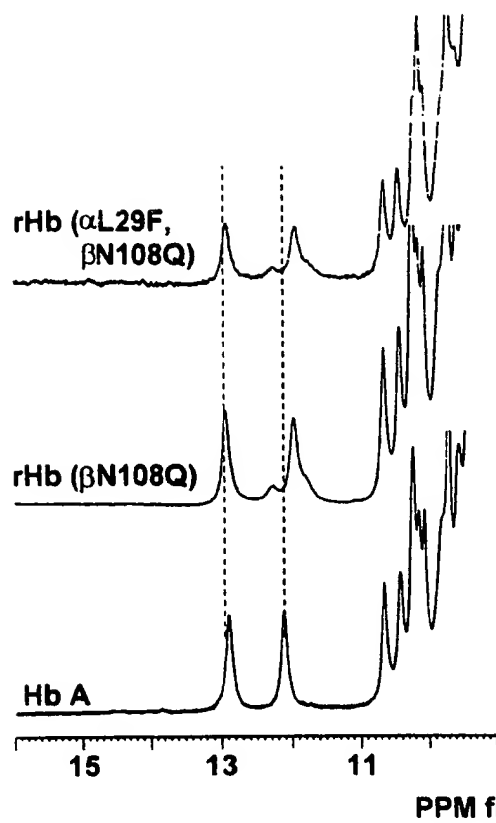


FIG. 6A

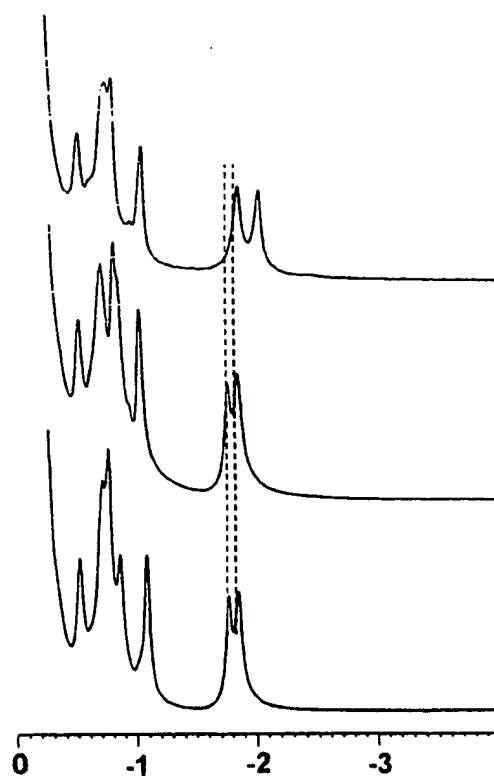


FIG. 6B

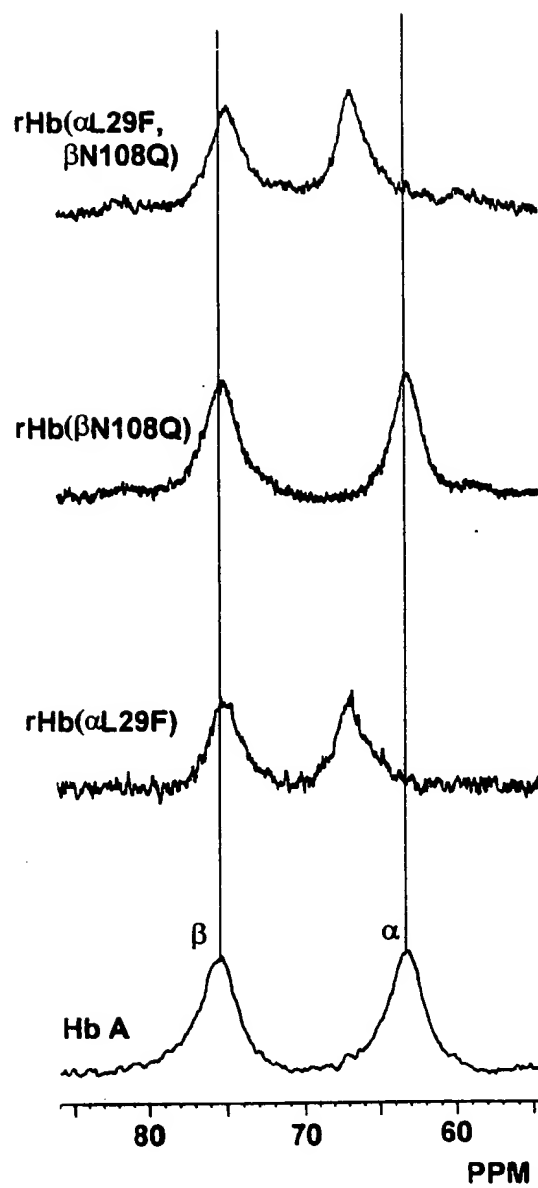


FIG. 7A

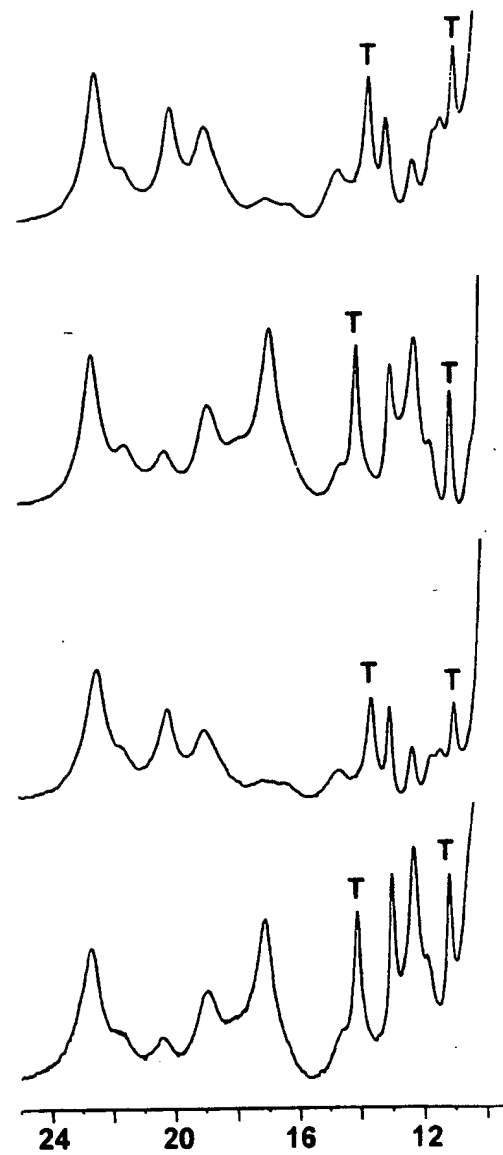


FIG. 7B

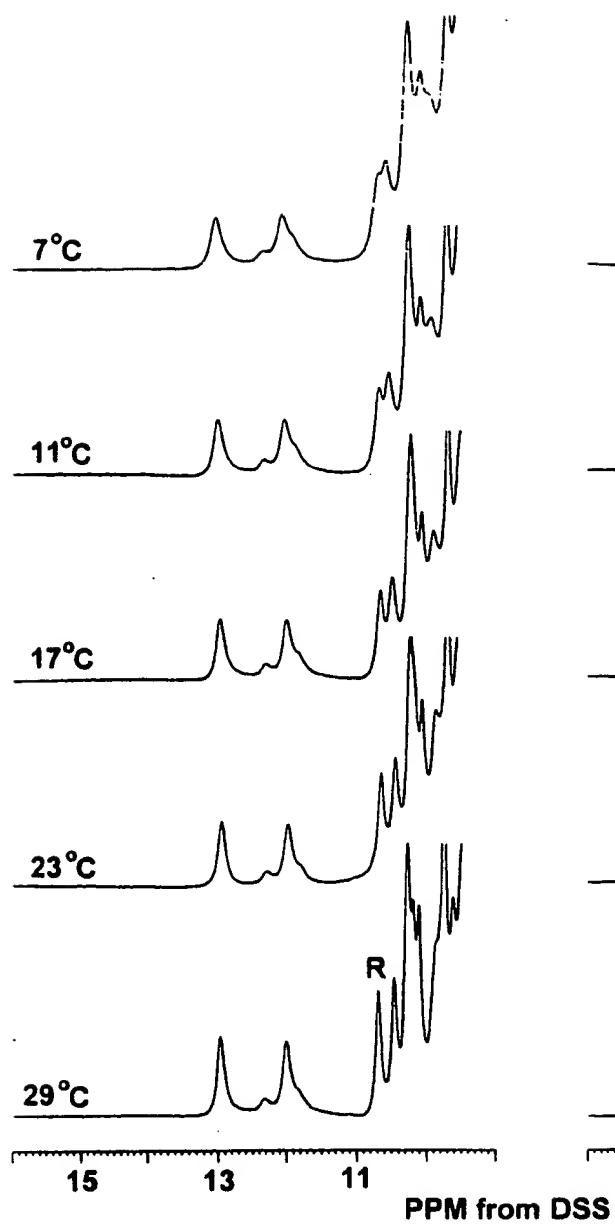


FIG. 8A

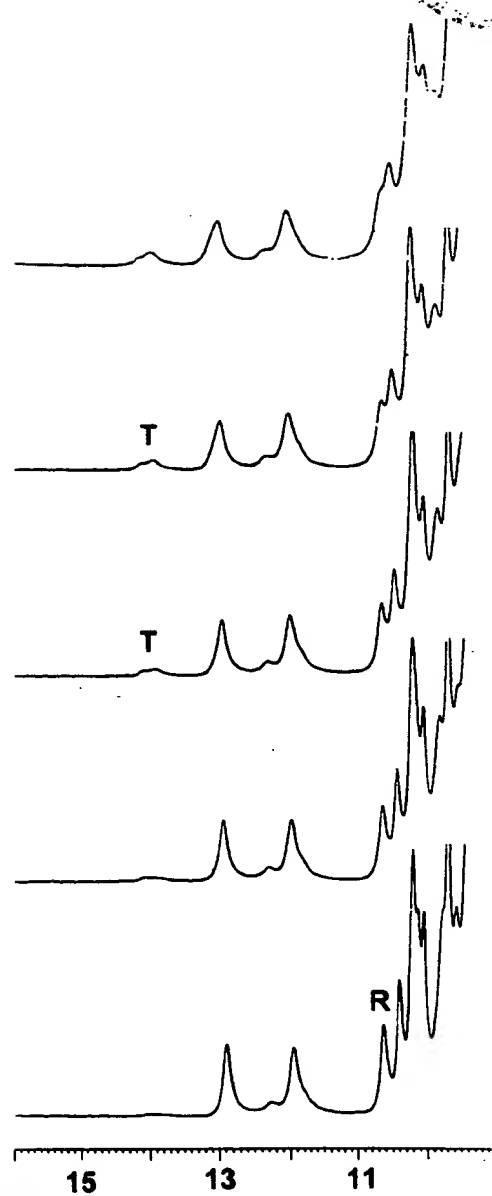


FIG. 8B

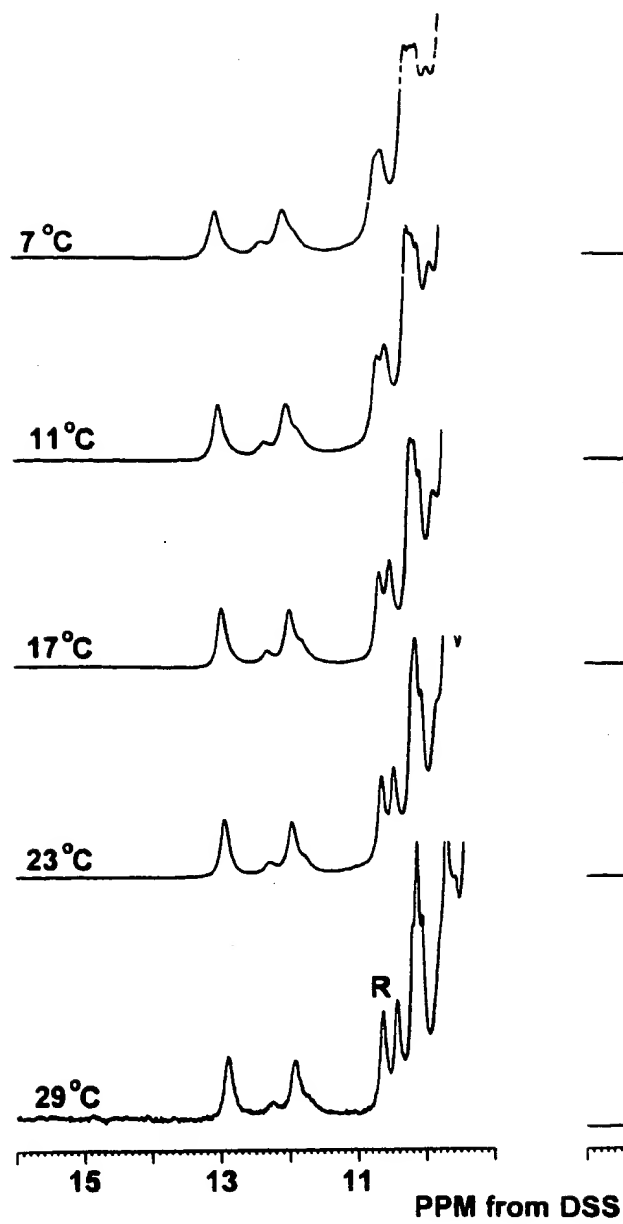


FIG. 9A

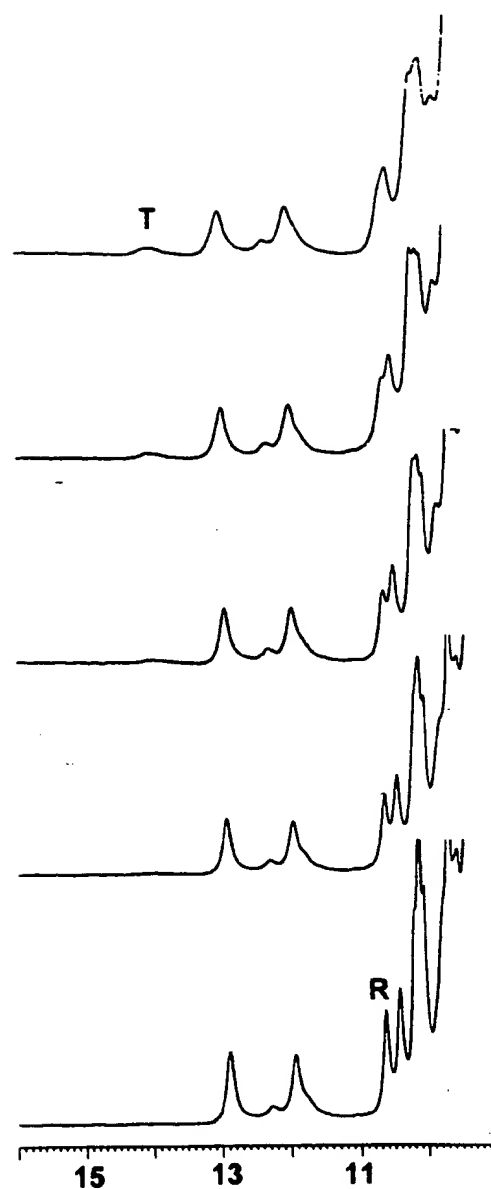


FIG. 9B

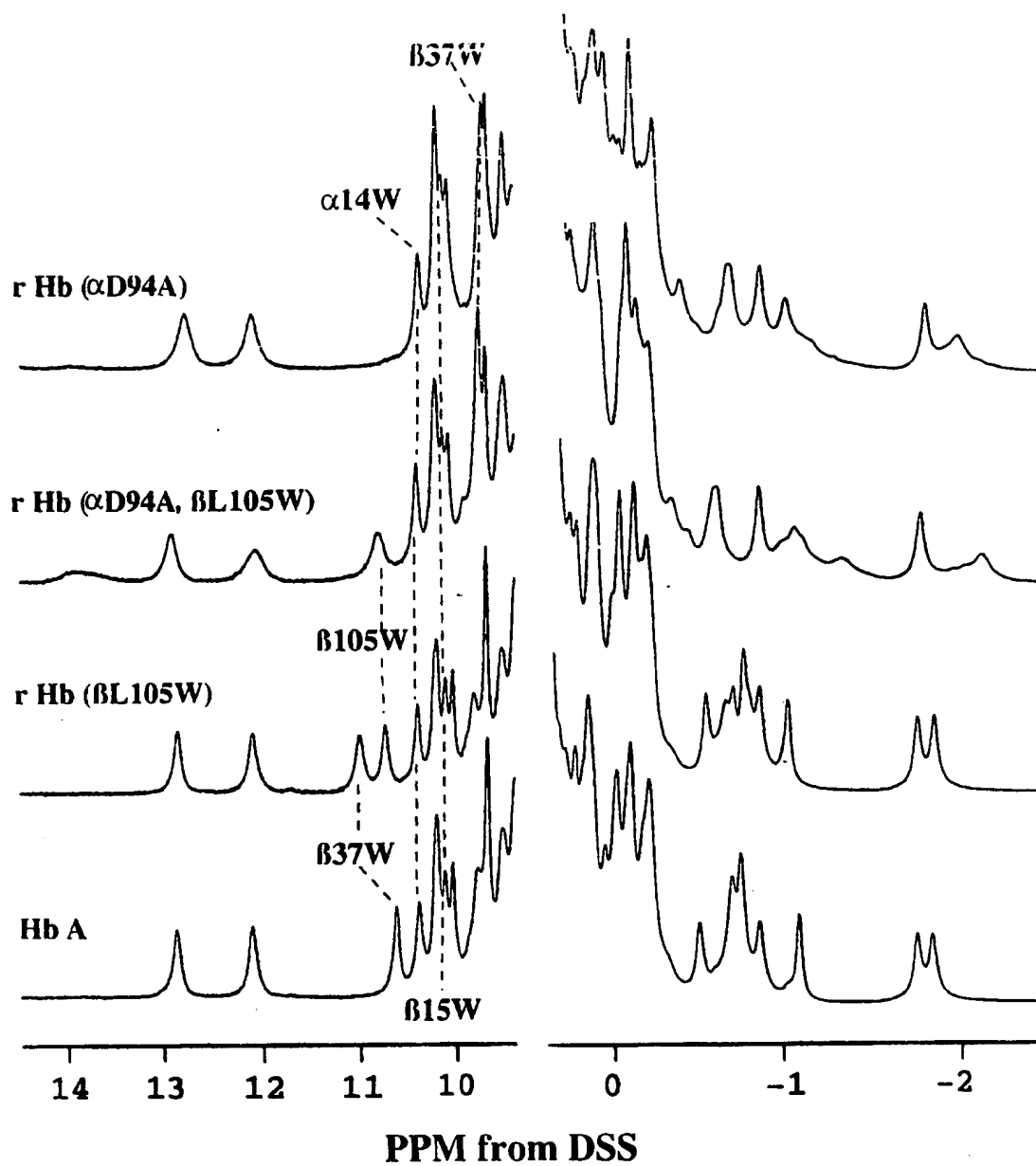


FIG. 10A

FIG. 10B

FIG. 11A

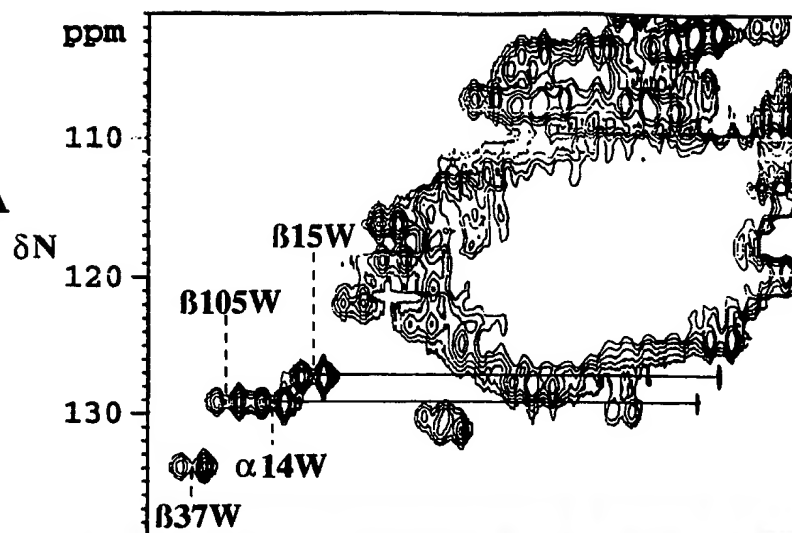


FIG. 11B

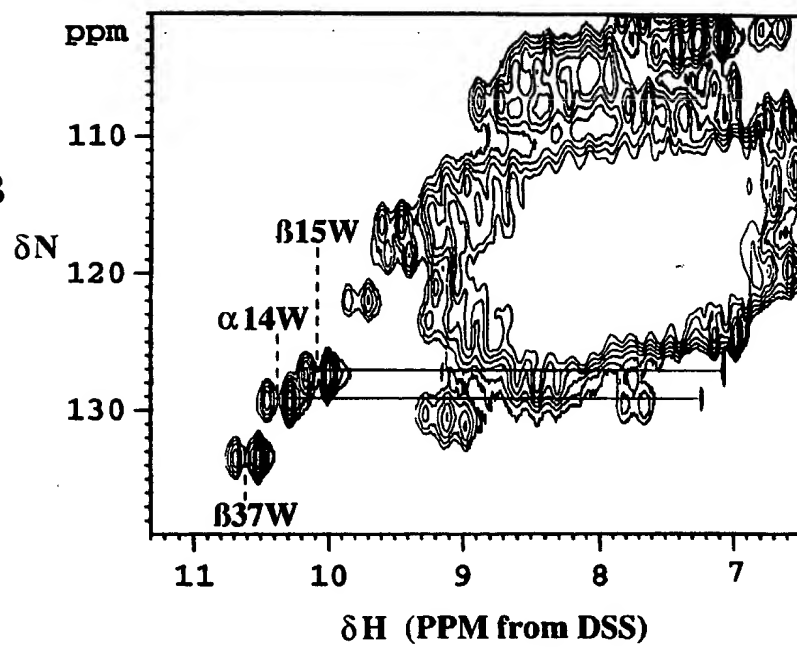


FIG. 12A

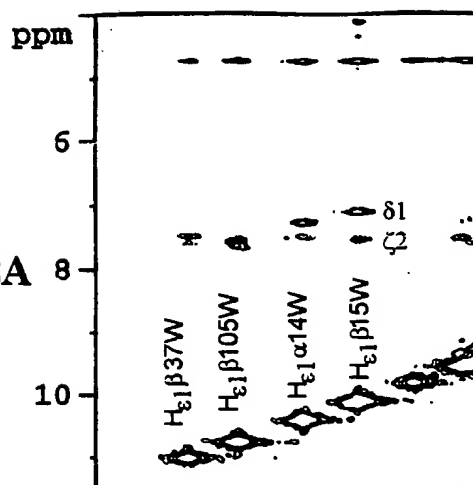


FIG. 12B

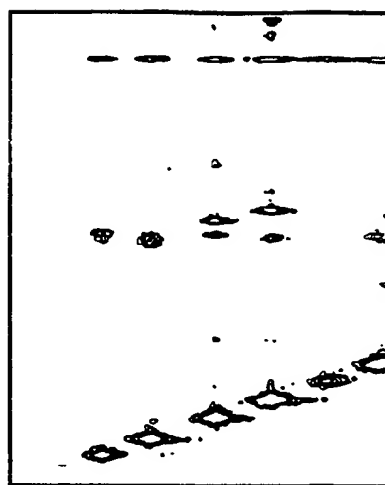


FIG. 12C

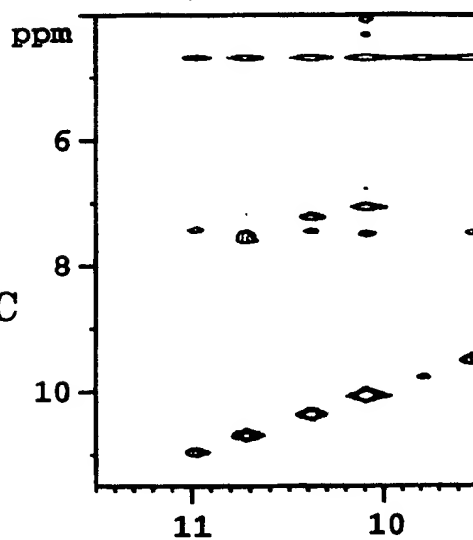
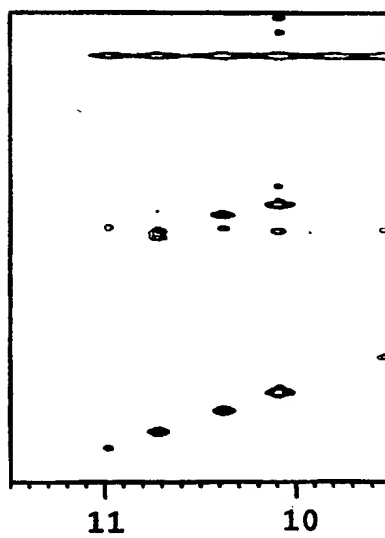


FIG. 12D



PPM from DSS

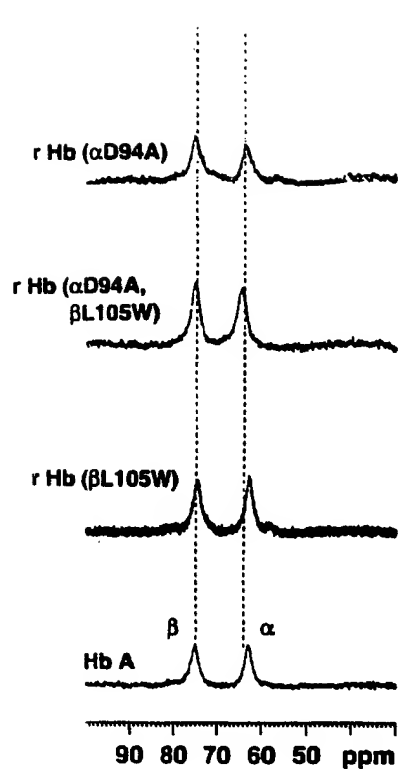


FIG. 13A

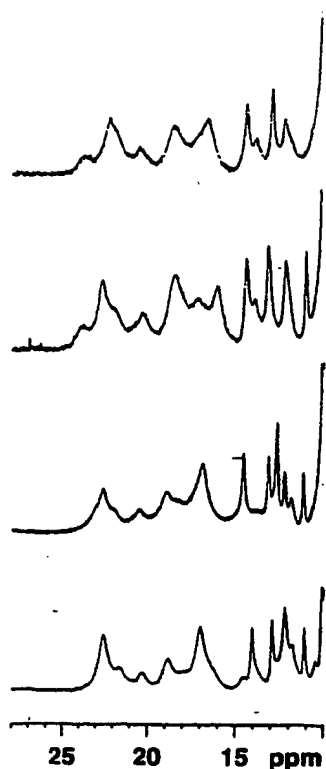


FIG. 13B

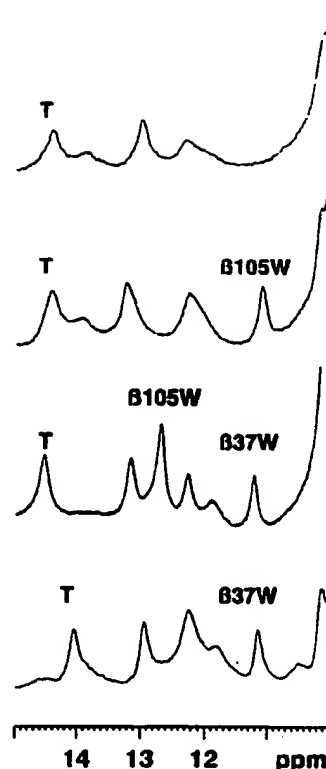


FIG. 13C

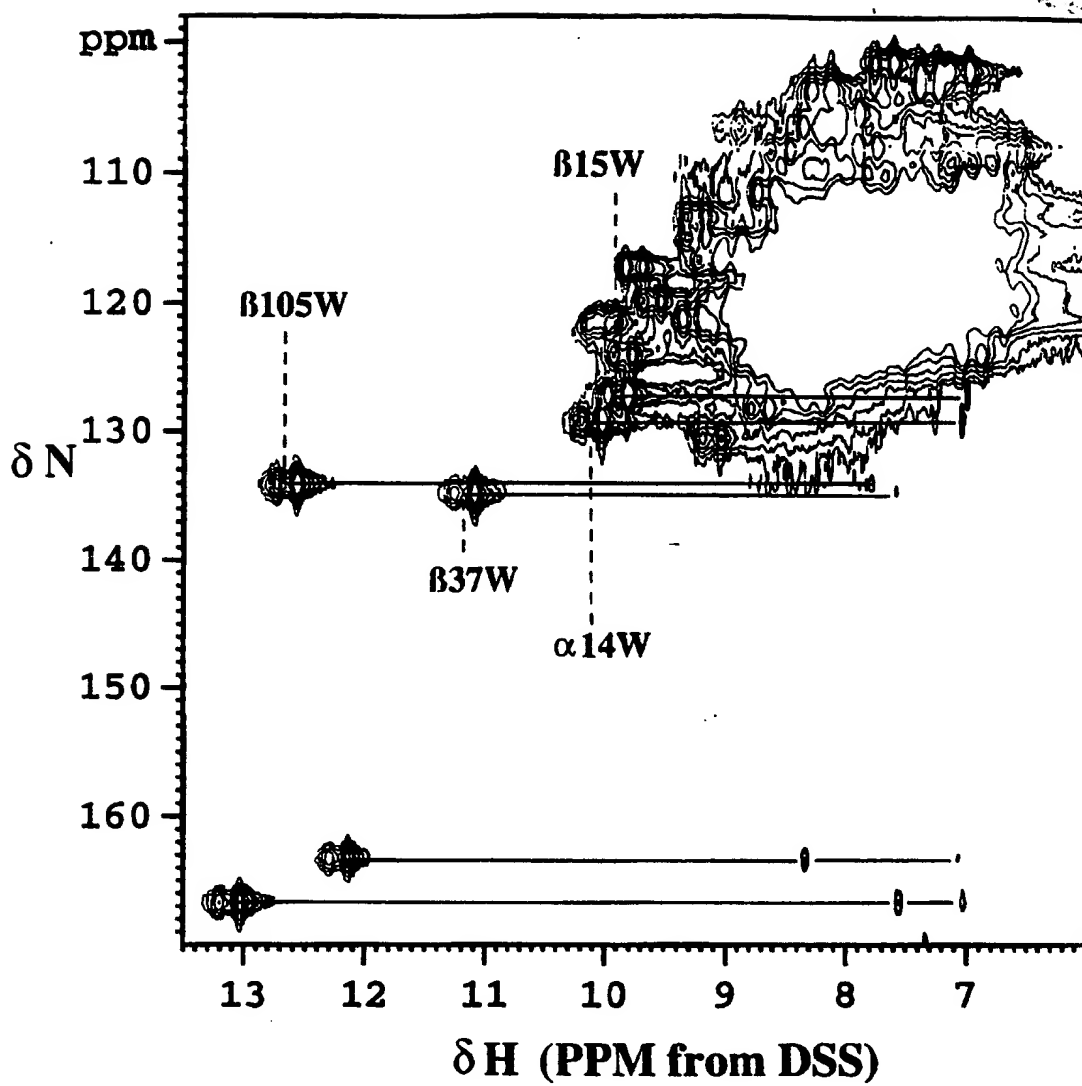


FIG. 14

FIG. 15A

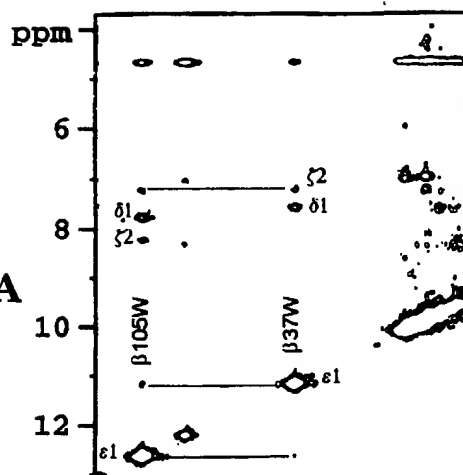


FIG. 15B

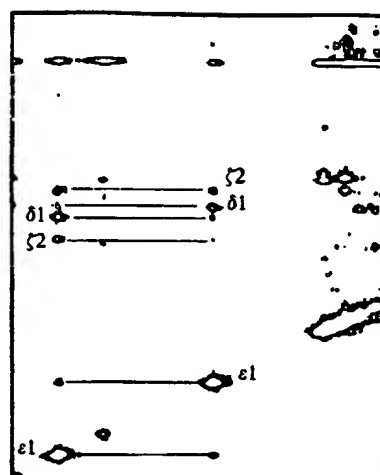


FIG. 15C

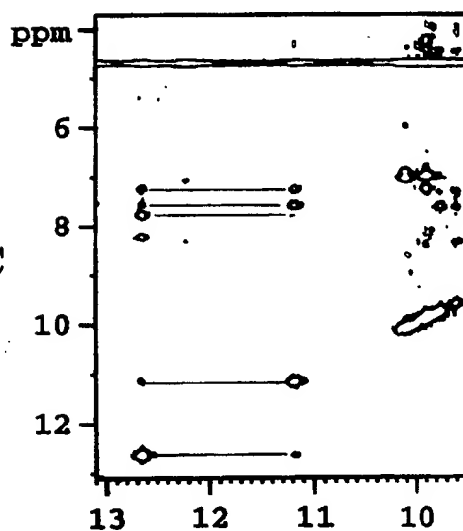
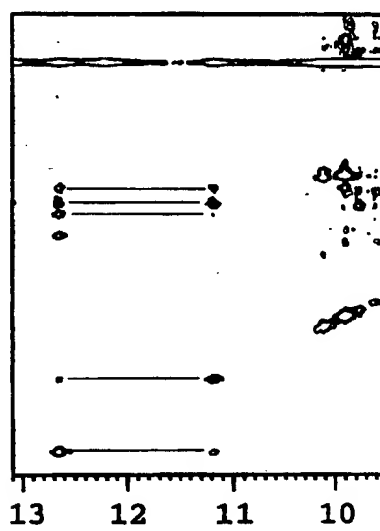


FIG. 15D



PPM from DSS

FIG. 16 A

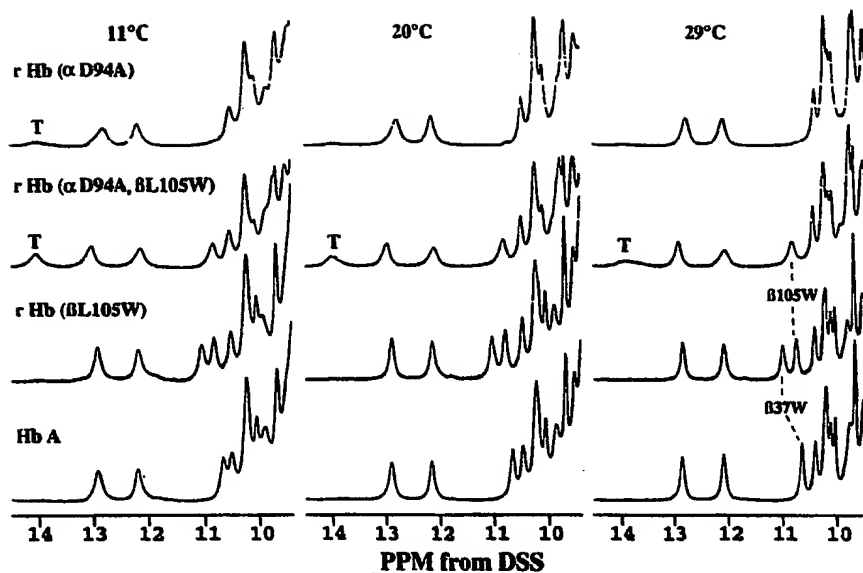


FIG. 16B

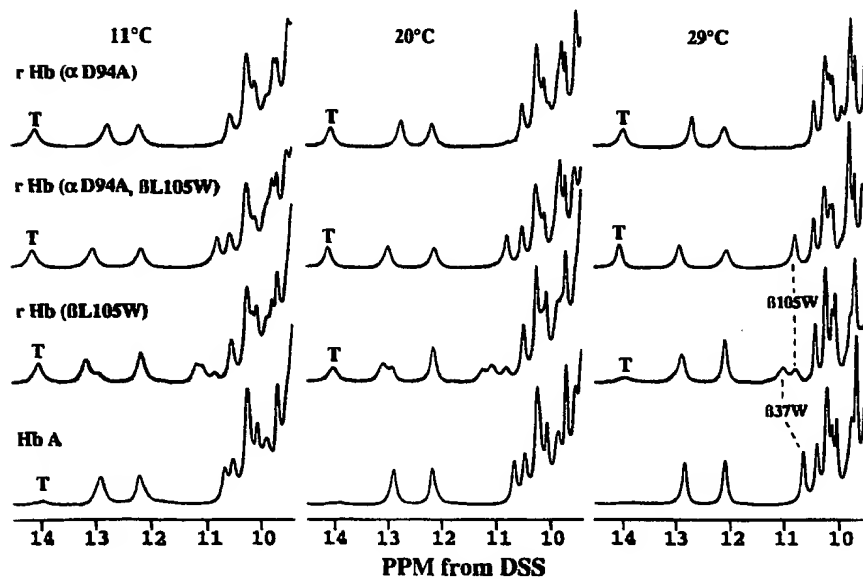


FIG. 17A

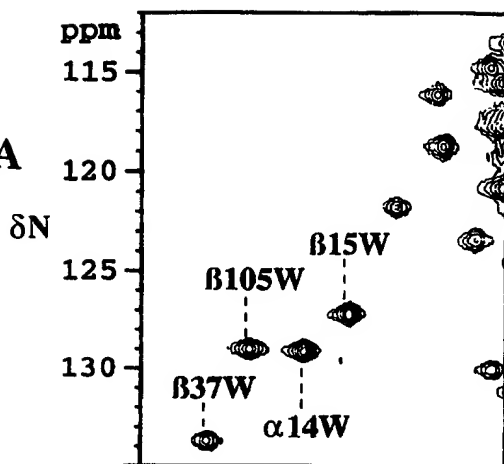


FIG. 17B



FIG. 17C

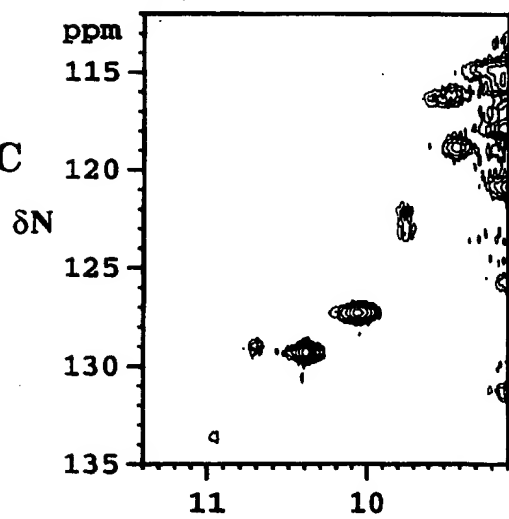


FIG 17D

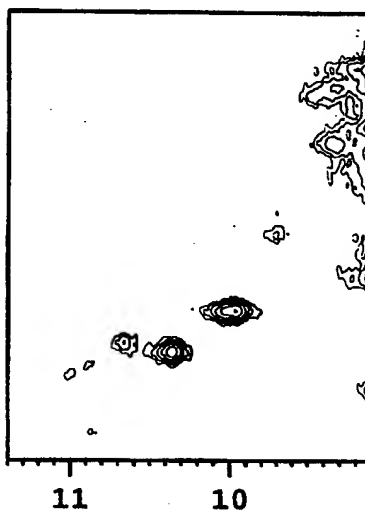




FIG. 18A

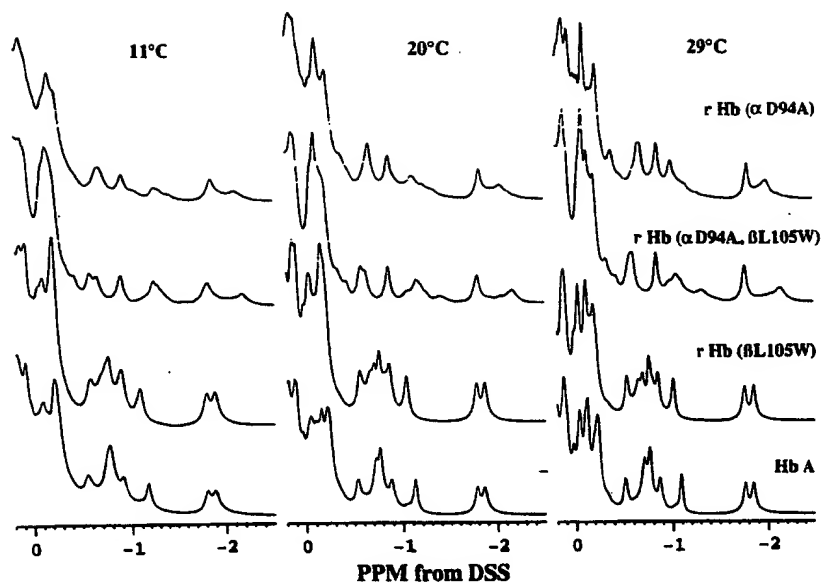


FIG. 18B

